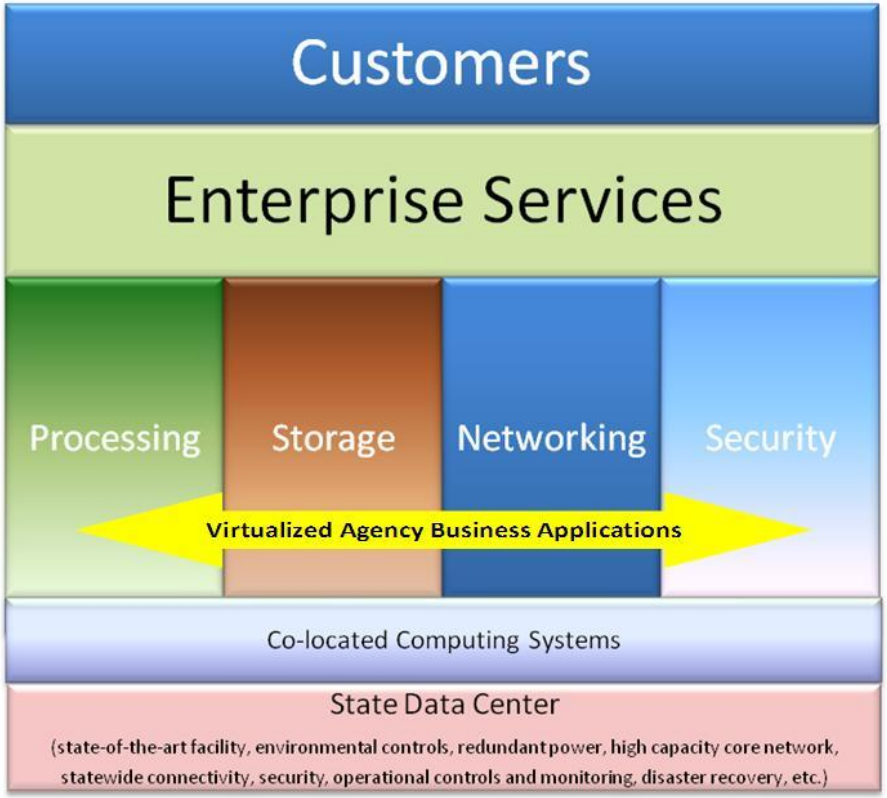
Washington State Department of Information Services

SDC Program

State Data Center

Program Overview



September 22, 2011

Agenda

- Program Goals and Objectives
- Organization
- Focus
- SDC Migration Projects
- Near-term Priorities
- Private Cloud Services (Shared Server Hosting)
- Private Cloud Procurement

State Data Center Goal Statement

To provide a much more secure and robust data center capability that will better protect state data and IT assets and reduce overall risk; …reduce the state's overall IT infrastructure operating costs through consolidation of resources, standardization, and implementation of new technologies and processes.

Source: Excipio Consulting, State Data Center and Wheeler Office Facility Business Plan, 12/10/2010

SDC Goals

- Improve security, reduce risk to the state
- Deliver high quality, resilient, professionally managed data center services
- Design services that deliver high value to our customers and those they serve
- Maximize resources and reduce costs through consolidation and standardization
- Be innovative and implement new technologies for the benefit of all CTS customers

SDC Program Objectives

1. **Technology:** Design the architecture, construct the infrastructure, and develop the enterprise IT services required to achieve the state's strategic goal of "Utility Computing".
2. **Business:** Develop and implement the SDC business models and supporting processes.
3. **Facilities:** Secure and manage the SDC facilities and critical environments (power, air, floor space, etc.).
4. **Projects:** Manage and coordinate projects to make the SDC operational, implement services, and migrate customer's systems.

SDC Program Units

SDC Projects Coordination

Business Planning and Development

SDC Program Management

Architecture and Engineering

SDC Facilities Management

SDC Program Focus

Business Planning

- **Business Mgmt**
  - Business plan, org & resource planning
  - Process mgmt & governance
  - Financial plan, analysis, Rates, Billing, legal
  - Metrics, Benchmarking, Reporting
- **Customer Relations Mgmt**
  - Customer Service and Support, SLAs
  - Acct Mgmt, Business Analysis
  - SDC Service Marketing
  - Communications
- **Product Mgmt**
  - Service product development & mgmt
  - Sourcing & Vendor Mgmt

Architecture & Engineering

- **Hosting Services**
  - Cloud Infrastructure and Platform Services
  - Cloud Mgmt, operations, security
  - Technology Standards
  - Customer solutions engineering
  - Specialized Platforms (e.g. SAP, Exchange)
- **Infrastructure Services**
  - Co-Location design
  - Other Managed Services (e.g. storage)
  - Network: Telecom, Datacom
  - Security, gateways, directory services, etc.
  - Disaster Recovery, Risk Management

Facilities Management

- **Critical Environments**
  - Power, air, etc.
- **SDC Space Mgmt**
  - Floor space mgmt
  - Customer Liaison
- **Physical Security**
  - Premises security
  - Equipment security

Projects Coordination

- **SDC Core Infrastructure Projects**
- **SDC Facilities Prep Projects**
- **SDC Transition Projects**

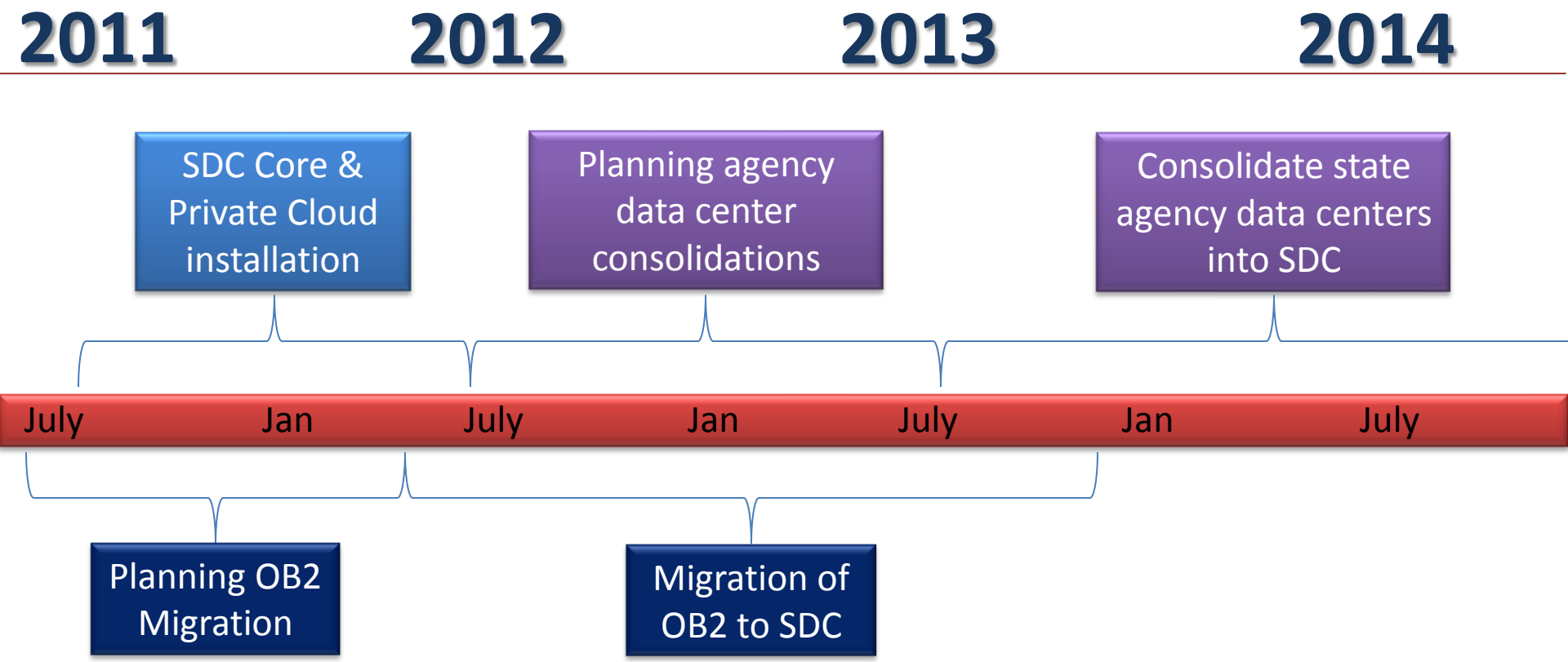
SDC/OB2 Migration

- Umbrella project to coordinate all SDC related subprojects. Project includes:
  - Preparing and building out the SDC facilities, physical security, and operational procedures
  - Implementing core infrastructure such as networks, security, storage, and shared server hosting environment (Private Cloud)
  - Migrating and moving computer systems and services currently operating in OB2

NOTE: The physical consolidation of individual agency data centers into the SDC will be planned in later phases.

SDC/OB2 Migration Sub-Projects

- Core Infrastructure
  - DSHS Core Redesign
  - DIS OB2 Core Prep
  - SDC Core Network Project
  - SDC Structured Cable Project
  - SDC External Private Networks
  - SDC External Public Networks
  - Security Infrastructure
  - Storage Infrastructure
  - DIS Virtualization Project
  - SDC Private Cloud Services Procurement
- Preparing the Facility
  - SDC Core – Floor prep
  - Data Hall 1 – Floor prep
  - Data Hall 2 – Floor prep
- Transition
  - SDC Private Cloud Services Implementation (install, pilot, migrate early adopters)
  - OB2 Migration (virtual migrations to Private Cloud, physical moves from OB2 to SDC)
  - Decommission OB2



Migration Timeline

SDC Near-term Priorities

- Private Cloud environment (Shared Server Hosting)
  - Procurement activities currently underway
  - Hired experts in data center and cloud services procurements
  - Operational for OB2 migrations
- Collaborate with the OCIO
  - Update Business Plan
  - Update schedule for agencies to consolidate to the SDC
- Establish program positions and hire staff
  - SDC Architecture & Engineering Manager and Staff
  - SDC Business Planning Manager and staff
  - SDC Facilities Management staff
- Manage and communicate SDC information
  - Accept stewardship of SSHV project artifacts
  - Publish SDC documentation to new CTS public Web site

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Questions?

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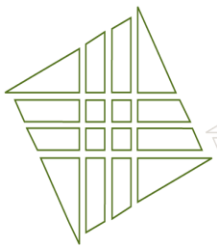


Private Cloud Services
(Shared Server Hosting)

Vision: Utility Computing

Distinguishing Characteristics (as defined by WA. State Computing Transformation Strategy)

- On-demand provisioning of IT resources
- Pay as you go (i.e. pay for what you use when you use it)
- Highly uniform hardware, software, and network environment
- Computing environment (infrastructure) is operated by the provider in a manner transparent to the consumer (i.e. shared pool of resources)
- Applications must conform to specific standards
- Security and disaster recovery capabilities supplied by the provider

Cloud Computing Defined

Essential Characteristics

On-Demand, Self-Service, Rapid Entry and Exit

Pay-As-You-Use, Metered Consumption

Shared Pools, Illusion of Infinite Resources

Rapid Elasticity, Scale Up/Down, Flex

Broad Network Access using Standard Internet Protocols

* NIST

"A model for enabling convenient, on-demand network access to a shared pool of configurable computing resources … that can be rapidly provisioned and released with minimal management effort or service provider interaction."

(v15, 07 Oct 09)

* National Institute of Standards and Technology

Cloud = "Utility"

Essential Characteristics

On-Demand, Self-Service, Rapid Entry and Exit

Pay-As-You-Use, Metered Consumption

Shared Pools, Illusion of Infinite Resources

Rapid Elasticity, Scale Up/Down, Flex

Broad Network Access using Standard Internet Protocols

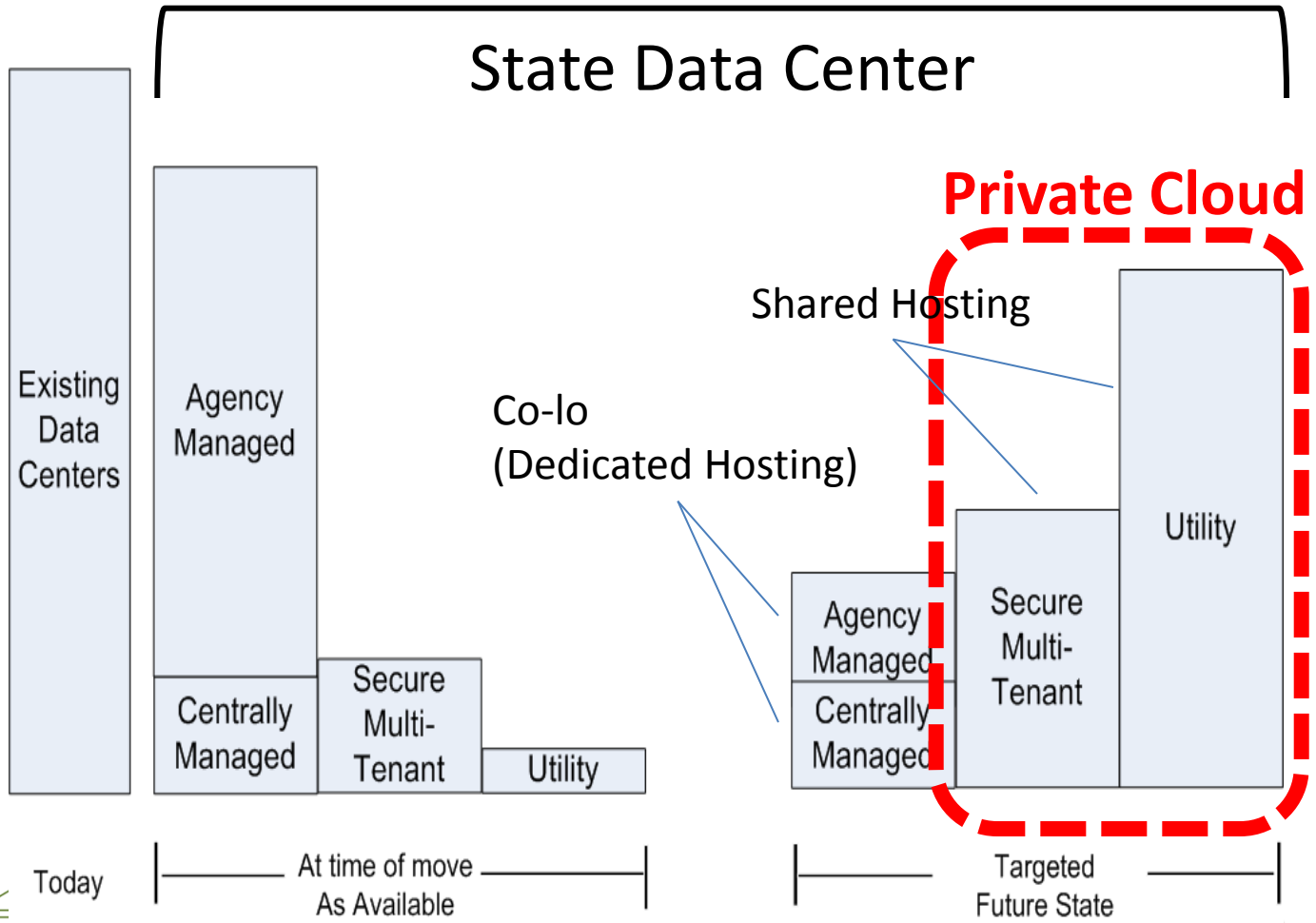
State Definition of "Utility"

- On-demand provisioning of IT resources
- Pay as you go – pay for what you use when you use it.
- Infrastructure transparent to the consumer (shared pools)
- Security and disaster recovery capabilities supplied by the provider
- Highly uniform hardware, software, and network environment
- Applications must conform to specific standards

Strategy

- Strategic goal has not changed – “Utility Computing”
- Definition of “utility” has changed slightly to accommodate more customers and enable faster migration
  - Old: Applications must conform to specific standards for data access, system and security services, and user interaction.
  - New: Applications must operate within a provider managed set of standardized platform images that include base operating systems, application platforms, databases, middleware, and other necessary components.
- Private Cloud is the technology enabler to achieve the strategic goal more quickly
- Private Cloud supports both “Secure Multi-tenant” and “Utility” environments as defined by the Computing Transformation Strategy (03/14/2011)

Evolving Toward Utility Computing

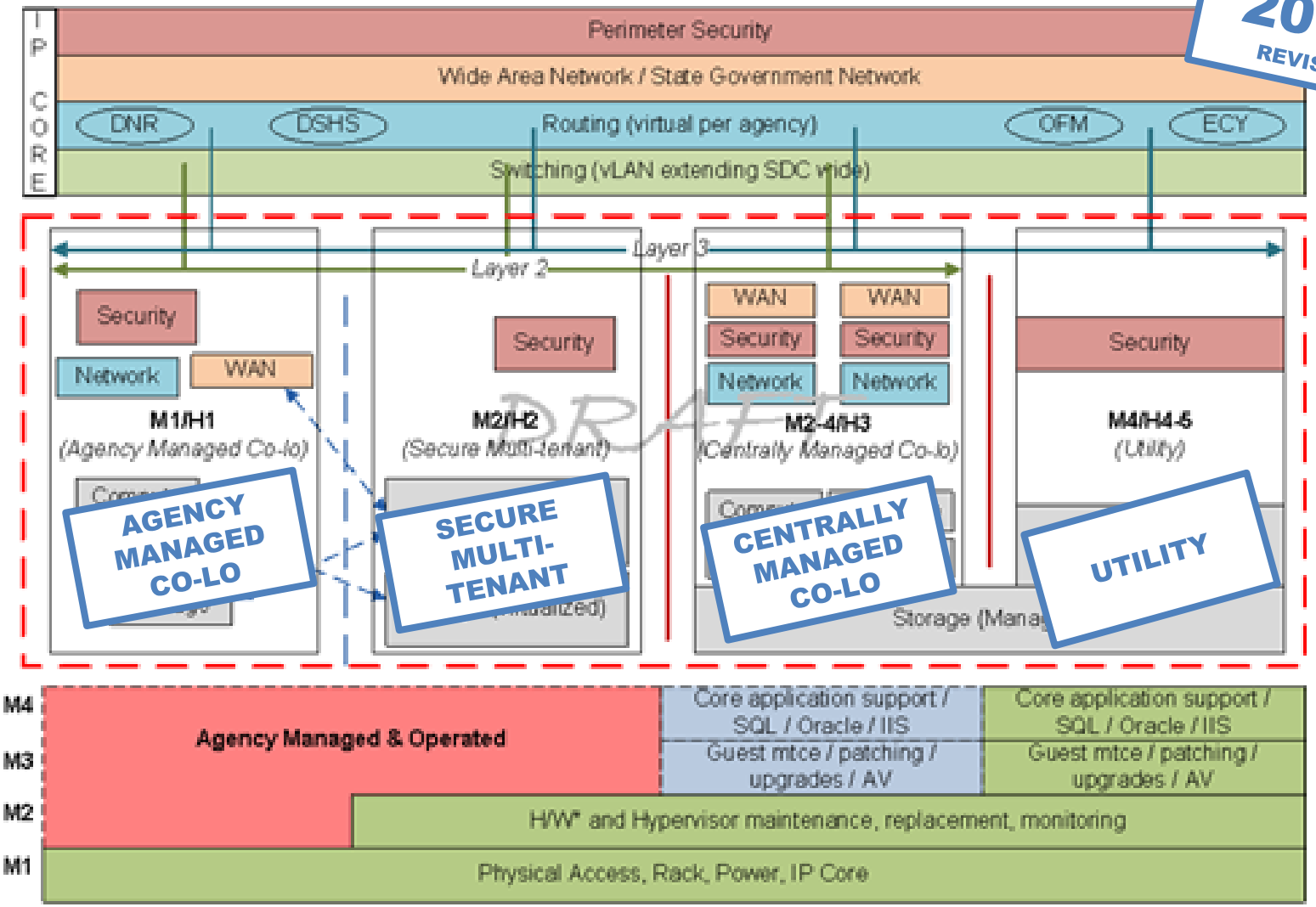


Move quickly to:

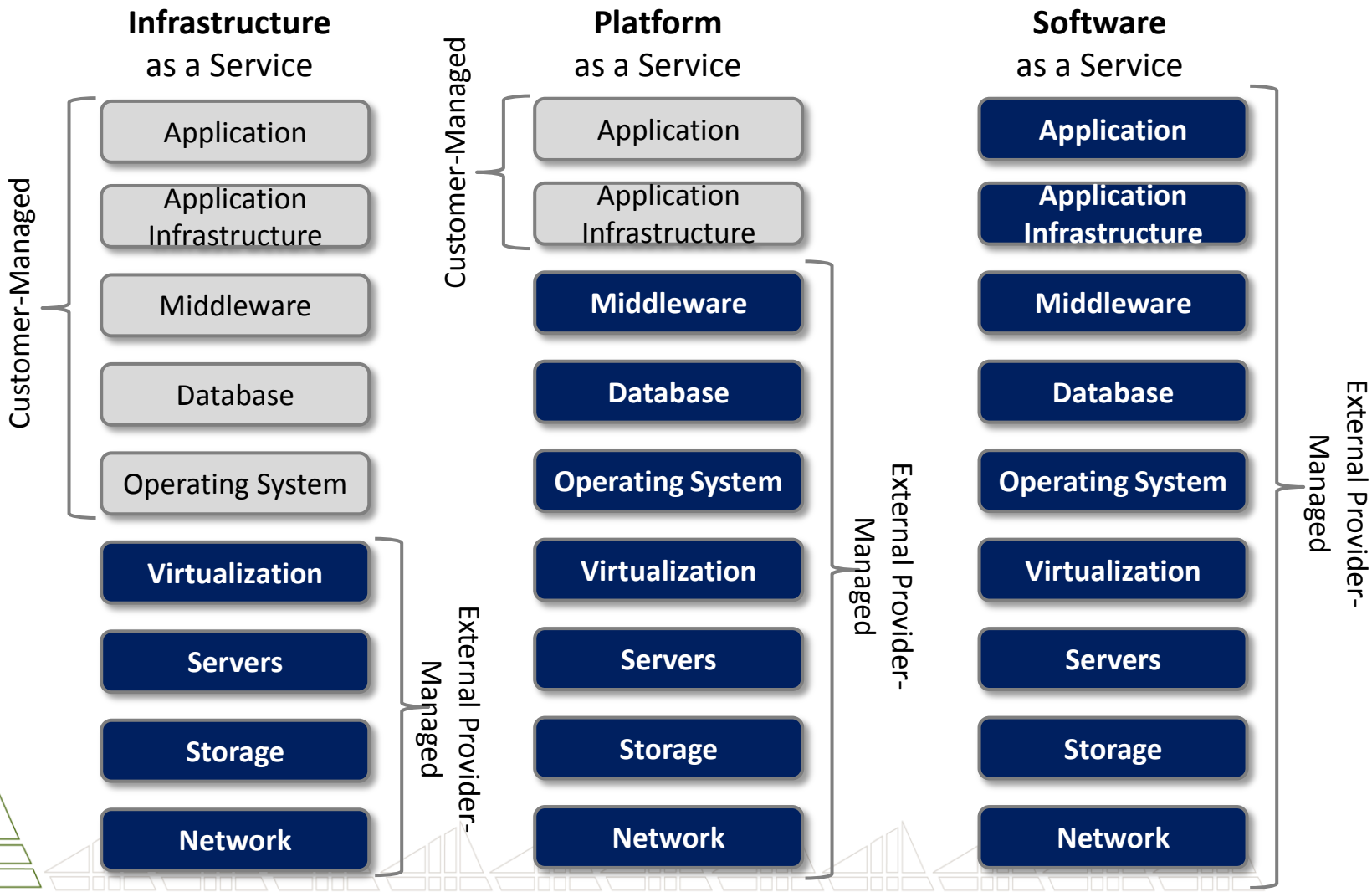
- Shrink our computing footprint
- Utilize compute & storage resources more effectively
- Leverage the power of the Enterprise to reduce the cost of services

Revised Terminology

SEPT 2010 REVISED



Service Models & Typical Industry Roles



Source: Technology Partners International, Inc. Used with permission

Service Models & Proposed CTS Use Cases

Use Case 1
"Utility"

- Customer agency selects virtual server configuration, operating system, database and middleware from web-based portal.
- Service provider supports a limited number of standard operating systems, database and middleware platforms.

Infrastructure
as a Service

- Application
- Application Infrastructure
- **Middleware**
- **Database**
- **Operating System**
- **Virtualization**
- **Servers**
- **Storage**
- **Network**

Out of Scope

- Service provider will not be providing applications, application runtime, or application support.

Use Case 2
"Secure Multi-tenant"

- Customer agency installs guest operating system, database and middleware on virtualized hardware.
- Service provider does not provide or support guest OS, database or middleware.

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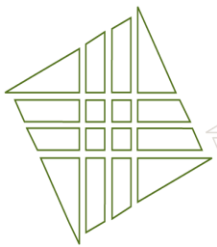
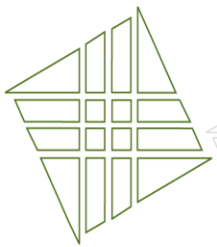


Private Cloud Procurement

Customer Engagement Approach and Timeline

General Scope

- Develop an RFP for vendor to supply private cloud infrastructure in SDC
  - Includes migration tools and optional services
- Execute the acquisition
- Manage the transition and on-going supporting services from the supplier



Core Teams

- The Customer Core Team to be identified by Steering Committee member CIOs. Provides agency's perspective on business and technical requirements

- The CTS Core Team provides technical expertise and support for the requirements validation exercise. Provides service provider's perspective.

Roles of the Core Teams

Roles and Expectations of the Core Teams

- Participate in workshops to develop requirements to be included in RFP documents
- Workshops to include business and technical requirements
- Workshops to include required service levels that will govern the responsibilities of the private cloud supplier
- Core Teams function as SMEs to support the project throughout the process by providing required information and data
- Core Teams provide detailed understanding of functional areas in scope
- The CTS Core Team brings service provisioning focus

Methodology for Requirements Validation Workshops

- Review of project/service shared understanding, common use of terms
- Review and draw from the project artifacts of the Shared Services Hosting Validation Project
- Review and draw from the SDC requirements documentation reviewed (Security, etc)
- Review and draw from the CTS provisioner requirements
- Review “starter set” of business, technical, and service level requirements (industry best practices)
- Follows a similar methodology as used in the Shared Services Email project for requirements validation in recent portions of the project

Timelines

- RFP development for Private Cloud infrastructure is in progress
- Requirements validation will begin first week of October
  - Total of four half-day working sessions, generally one per week
  - Final session the week of October 31

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